

CB

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
27 December 2001 (27.12.2001)

PCT

(10) International Publication Number  
WO 01/98534 A3

(51) International Patent Classification<sup>7</sup>: C12Q 1/68. 1/70.  
G01N 33/68. C12N 15/10. B01L 3/00. B01J 19/00

(21) International Application Number: PCT/GB01/02831

(22) International Filing Date: 22 June 2001 (22.06.2001)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
0015443.5 23 June 2000 (23.06.2000) GB  
0026099.2 25 October 2000 (25.10.2000) GB  
60/246.851 8 November 2000 (08.11.2000) US

(71) Applicant (for all designated States except US): DIVERSYS LIMITED [GB/GB]; 20 Park Crescent, London W1N 4AL (GB).

(72) Inventors; and

(75) Inventors/Applicants (for US only): HOLT, Lucy, Jessica [GB/GB]; 9b Anstey Way, Trumpington, Cambridge CB2 2JE (GB). TOMLINSON, Ian [GB/GB]; 13 Tunwells Lane, Great Shelford, Cambridge CB2 5LJ (GB).

(74) Agents: MASCHIO, Antonio et al.; D Young & Co., 21 New Fetter Lane, London EC4A 1AD (GB).

(81) Designated States (national): AE. AG. AL. AM. AT. AU. AZ. BA. BB. BG. BR. BY. BZ. CA. CH. CN. CO. CR. CU. CZ. DE. DK. DM. DZ. EC. EE. ES. FI. GB. GD. GE. GH. GM. HR. HU. ID. IL. IN. IS. JP. KE. KG. KP. KR. KZ. LC. LK. LR. LS. LT. LU. LV. MA. MD. MG. MK. MN. MW. MX. MZ. NO. NZ. PL. PT. RO. RU. SD. SE. SG. SI. SK. SL. TJ. TM. TR. TT. TZ. UA. UG. US. UZ. VN. YU. ZA. ZW.

(84) Designated States (regional): ARIPO patent (GH. GM. KE. LS. MW. MZ. SD. SL. SZ. TZ. UG. ZW), Eurasian patent (AM. AZ. BY. KG. KZ. MD. RU. TJ. TM), European patent (AT. BE. CH. CY. DE. DK. ES. FI. FR. GB. GR. IE. IT. LU. MC. NL. PT. SE. TR), OAPI patent (BF. BJ. CF. CG. CI. CM. GA. GN. GW. ML. MR. NE. SN. TD. TG).

Declaration under Rule 4.17:

— of inventorship (Rule 4.17(iv)) for US only

Published:

— with international search report  
— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report:  
30 May 2002

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

WO 01/98534 A3

(54) Title: MATRIX SCREENING METHOD

(57) Abstract: The invention concerns a method which can be used to screen two or more repertoires of molecules against one another and/or to create combinatorial repertoires by combining two or more repertoires. In particular, the invention relates to a method whereby two repertoires of molecules can be screened such that substantially all members of the first repertoire are tested against substantially all members of the second repertoire for functional interactions. Furthermore, the invention relates to the creation and screening of antibody repertoires by combining a repertoire of heavy chains with a repertoire of light chains such that antibodies formed by the substantially all combinations of heavy and light chains can be screened against one or more target ligands.

# INTERNATIONAL SEARCH REPORT

In tional Application No  
PCT/GB 01/02831

<b>A. CLASSIFICATION OF SUBJECT MATTER</b> IPC 7 C12Q1/68 C12Q1/70 G01N33/68 C12N15/10 B01L3/00 B01J19/00		
According to International Patent Classification (IPC) or to both national classification and IPC		
<b>B. FIELDS SEARCHED</b> Minimum documentation searched (classification system followed by classification symbols) IPC 7 G01N B01L C12Q B01J		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practical, search terms used) EPO-Internal, WPI Data, BIOSIS		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 99 28744 A (MAX PLANCK GESELLSCHAFT ;BANCROFT DAVID (DE); LEHRACH HANS (DE); W) 10 June 1999 (1999-06-10) page 3, paragraph 2 -page 6, paragraph 1 page 11, paragraph 2 -page 13, paragraph 5 page 34, paragraph 2 -page 36, paragraph 1; figure 7; example 9	1-50
X	MASKOS U ET AL: "A STUDY OF OLIGONUCLEOTIDE REASSOCIATION USING LARGE ARRAYS OF OLIGONUCLEOTIDES SYNTHESISED ON A GLASS SUPPORT" NUCLEIC ACIDS RESEARCH, IRL PRESS LTD., OXFORD, GB, vol. 21, no. 20, 1993, pages 4663-4669, XP000999271 ISSN: 0305-1048 abstract; figures 1-3	1,5,7,8, 13,22, 23,31, 32,48-50
-/--		
<input checked="" type="checkbox"/> Further documents are listed in the continuation of box C. <span style="margin-left: 100px;"><input checked="" type="checkbox"/> Patent family members are listed in annex.</span>		
* Special categories of cited documents : <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>*A* document defining the general state of the art which is not considered to be of particular relevance</p> <p>*E* earlier document but published on or after the international filing date</p> <p>*L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>*O* document referring to an oral disclosure, use, exhibition or other means</p> <p>*P* document published prior to the international filing date but later than the priority date claimed</p> </div> <div style="width: 45%;"> <p>*T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>*X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</p> <p>*Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.</p> <p>*Z* document member of the same patent family</p> </div> </div>		
Date of the actual completion of the international search  <div style="text-align: center; font-weight: bold;">15 April 2002</div>		Date of mailing of the international search report  <div style="text-align: center; font-weight: bold;">23/04/2002</div>
Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016		Authorized officer  <div style="text-align: center; font-weight: bold;">Bradbrook, D</div>

# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/GB 01/02831

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 93 09668 A (AFFYMAX TECH NV) 27 May 1993 (1993-05-27) page 14, line 13 -page 25, line 5; claims 1-17,35-47; figures 1-4 ---	4,29,30, 48-50
X	UETZ P ET AL: "A COMPREHENSIVE ANALYSIS OF PROTEIN-PROTEIN INTERACTIONS IN SACCHAROMYCES CEREVISIAE" NATURE, MACMILLAN JOURNALS LTD. LONDON, GB, vol. 403, 10 February 2000 (2000-02-10), pages 623-627, XP000938868 ISSN: 0028-0836 the whole document ---	1-3,6-8, 13-23, 34-47
X	EMILI A Q ET AL: "LARGE-SCALE FUNCTIONAL ANALYSIS USING PEPTIDE OR PROTEIN ARRAYS" NATURE BIOTECHNOLOGY, NATURE PUB. CO, NEW YORK, NY, US, vol. 18, no. 4, April 2000 (2000-04), pages 393-397, XP000919070 ISSN: 1087-0156 the whole document ---	1,5,7,8, 13-23
Y	the whole document ---	10-12, 24-28, 34-47
X	CHEUNG V G ET AL: "MAKING AND READING MICROARRAYS" NATURE GENETICS, NEW YORK, NY, US, vol. 21, January 1999 (1999-01), pages 15-19, XP000961558 ISSN: 1061-4036 page 15, column 1, paragraph 2 -page 16, column 1, paragraph 2; figure 3 ---	1,5,7-9, 13,29
X	PANDEY AKHILESH ET AL: "Proteomics to study genes and genomes" NATURE, MACMILLAN JOURNALS LTD. LONDON, GB, vol. 405, no. 6788, 15 June 2000 (2000-06-15), pages 837-846, XP002172041 ISSN: 0028-0836 page 841, column 1, paragraph 3 -page 845, column 1, paragraph 4; figures 4,5,7 ---	1,5,7,8, 13-23
Y	the whole document ---	10-12, 24-28, 34-47
P,X	WO 01 00866 A (ODYSSEY PHARMACEUTICALS INC) 4 January 2001 (2001-01-04) page 6, line 20 -page 8, line 9; claims 1-17 -----	10-22,44

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/GB 01/02831

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 9928744	A	10-06-1999	AU 1757599 A	05-07-1999
			AU 2050499 A	16-06-1999
			AU 2050599 A	16-06-1999
			CA 2311705 A1	10-06-1999
			CA 2311896 A1	24-06-1999
			CA 2311927 A1	10-06-1999
			WO 9931509 A1	24-06-1999
			WO 9928744 A1	10-06-1999
			WO 9928745 A1	10-06-1999
			EP 1036329 A1	20-09-2000
			EP 1042670 A1	11-10-2000
			EP 1036324 A1	20-09-2000
			GB 2338711 A ,B	29-12-1999
			JP 2001525186 T	11-12-2001
WO 9309668	A	27-05-1993	US 5384261 A	24-01-1995
			US 5412087 A	02-05-1995
			AU 675054 B2	23-01-1997
			AU 3148193 A	15-06-1993
			CA 2124087 A1	27-05-1993
			EP 1086742 A1	28-03-2001
			EP 0624059 A1	17-11-1994
			EP 0916396 A2	19-05-1999
			EP 0972564 A2	19-01-2000
			JP 7506561 T	20-07-1995
			WO 9309668 A1	27-05-1993
			US 6040193 A	21-03-2000
			US 6136269 A	24-10-2000
			US 5885837 A	23-03-1999
			US 5677195 A	14-10-1997
			AU 4110793 A	29-11-1993
			WO 9322680 A1	11-11-1993
WO 0100866	A	04-01-2001	AU 6054900 A	31-01-2001
			WO 0100866 A1	04-01-2001